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COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE 375th MEETING

Held at Headquarters, New York,
on Tuesday, 23 June 1992, at 10.30 a.m.

Chairman: Mr. HOHENFELLNER (Austria)

- Organization of work
- Report of the Legal Subcommittee on the work of its thirty-first session (continued)
- Spin-off benefits of space technology: review of current status

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The meeting was called to order at 10.50 a.m.

ORGANIZATION OF WORK

The CHAIRMAN: The Committee will continue this morning its consideration of agenda item 8, "Report of the Legal Subcommittee on the work of its thirty-first session". We shall also take up consideration of agenda item 10, "Spin-off benefits of space technology: review of current status", as soon as we have concluded our consideration of agenda item 8.

I should like to announce that I shall devote this afternoon's meeting to informal consultations of the whole, with full interpretation facilities, on the nuclear power sources issue, and I urge delegations to be here, if possible, at three o'clock sharp so that we can dedicate the whole afternoon to open-ended, informal consultations, during which all delegations will have the opportunity to make their points.

REPORT OF THE LEGAL SUBCOMMITTEE ON THE WORK OF ITS THIRTY-FIRST SESSION (continued)

Mr. LIU Dagun (China) (interpretation from Chinese): First of all, I should like, through you, Mr. Chairman, to express my delegation's thanks to Mr. Mikulka, Chairman of the Subcommittee, for the hard work he has done in chairing the Legal Subcommittee.

My delegation is pleased to note that progress was made on all three main agenda items at the last session of the Sucommittee. Here, I should like to make a few brief comments.

As one of the main agenda items, the use of nuclear power sources in outer space has been before the Subcommittee for the last 13 years. Through many years of hard work in the Sucommittee, particularly through the untiring efforts of the Chairman and the sponsors, agreement was reached on most of the draft principles relevant to the use of nuclear power sources in outer space.

(Mr. Liu Dagun, China)

As of now, only the Preamble, Principle 1A, Principle 4 and Principle 12 are still pending, but all parties fully exchanged views on these questions in the Subcommittee.

While we do not deny the merit of the use of nuclear power sources in outer space, we insist that their use must be based on protecting the environment of the planet and ensuring the safety of mankind. It is precisely because the draft principles under discussion are conducive to the safe use of nuclear power sources in outer space and to the protection of the inhabitants and environment of the Earth that the Chinese delegation has been doing its best to facilitate this exercise.

We believe that the working non-paper submitted by the Chairman of the Working Group adequately incorporated many potentially acceptable views. Taking that working non-paper and document A/AC.105/C.2/L.154/Rev.11 as a basis, and provided that all delegations work together in the spirit of compromise, it will be possible to finalize this text in accordance with operative paragraph 4 (a) of General Assembly resolution 46/45. The Chinese delegation will work hard towards this end with the aim of fulfilling the task entrusted to the Committee by the General Assembly and present it as a gift for International Space Year, as my delegation put it in its statement a few days ago.

As regards the definition and delimitation of outer space, our discussion over the years demonstrates that there are serious differences among delegations. The working paper submitted by the delegation of the Russian Federation on questions concerning the legal regime for aerospace objects was discussed at the last session of the Subcommittee. Although this document merely raised questions and did not attempt to resolve them, it at least

(Mr. Liu Daqun, China)

introduced another perspective, which may help the discussion on some of the issues.

Concerning the geostationary orbit, the Subcommittee conducted a first reading of a working non-paper entitled "Geostationary satellite orbit". The Chinese delegation followed with great interest the discussion on paragraph 7 of this document, and suggested that some of the controversial issues arising from paragraph 4 be referred to the Scientific and Technical Subcommittee for further comment.

We have always believed that some of the functions of the Legal Subcommittee and of the International Telecommunication Union (ITU) are complementary. Therefore, we are in favour of discussing the relevant issues in the Subcommittee and of seeking appropriate and necessary cooperation from ITU in this regard.

With regard to the the question of the spin-off benefits of outer space, the Subcommittee concluded the first reading of working paper A/AC.105/C.2/L.182, entitled "Principles regarding international cooperation in the exploration and utilization of outer space for peaceful purposes". We noted that, while there is still room for improvement with respect to this document, it can serve as a good basis for discussion, and that, despite the differences of opinion, delegations exchanged their views candidly and in good faith. We support this kind of effort to enable more countries to participate in and benefit from activities in outer space through the work of the Subcommittee. The Chinese delegation will continue to participate actively in the deliberations on this principle, and hopes that all countries will show interest in and give stimulus to this process.

(Mr. Liu Dagun, China)

As a developing, spacefaring country, China attaches great importance to the work of the Subcommittee. We have always been of the opinion that the development of space technologies and space activities go hand in hand with the development of space law, and that space law, while it is the product of developments in space technologies, also ensures and facilitates their development. China has always actively participated in the formulation of space law, and has always been positive and constructive towards the work of the Subcommittee. We will continue to approach the various tasks of the Subcommittee with this positive attitude, and look forward to substantial progress in the Committee.

Mr. GORBULIN (Ukraine) (interpretation from Russian): The report of the Legal Subcommittee traditionally becomes the subject of interested discussion, which affirms the importance attached by the members of the Committee to the problems on its agenda. This is quite understandable, as the progressive development of the norms of space law is an essential aspect of strengthening international cooperation in outer space as a whole.

In this connection, we should like to comment briefly on the outcome of the work of the thirty-first session of the Sucommittee.

The very title of item 5 of the Legal Subcommittee's agenda, "Consideration of the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries", gives the gist of the problem, which is that a legal regime must be elaborated which would allow all countries, whatever their level of development, to use the results of human activities in space.

(Mr. Gorbulin, Ukraine)

That could be achieved by determining specific areas of international cooperation and by reaching agreement on the form of cooperation in each area. One example of a priority area for cooperation could be the protection and preservation of space itself. At that level we have carefully to analyse the decisions reached at the United Nations Conference on Environment and Development held in Rio de Janeiro. However, it is already clear that scientific and technological progress is having consequences that require the regulation of human activity.

Therefore, the delegation of Ukraine feels that there is a need rapidly to conclude the work on the elaboration of draft principles relevant to the use of nuclear power sources in outer space. The use of nuclear power sources is yet another scientific step forward in the further exploration and utilization of outer space, since they considerably expand the power potential of spacecraft, but we must also bear in mind their potential danger. Ukraine, which suffered the Chernobyl disaster, realizes that more than anyone. Accordingly, we believe that it is necessary to seek a reasonable balance between nuclear and other sources of energy for spacecraft. The most important matter is to reduce to a technical minimum the likelihood of any accident linked with on-board nuclear power sources.

Moreover, we feel it is necessary to look into the practice of providing information about the launching of spacecraft with nuclear power sources on board and the publication of material assessing their security risk before each launch. There are other legal problems that can be resolved only step by step. It is not possible to reach decisions satisfactory to all countries at each given stage. However, if we move from one stage to the next we can then find general decisions acceptable to all.

(Mr. Gorbulin, Ukraine)

For several years we have been waiting for a solution to the problem of defining and delimiting outer space. Ukraine believes that outer space, to which the sovereignty of States extends, with all its consequences, should be legally delimited and open to free exploration and utilization by all countries. It is well known that a consensus on this issue has still not been formed. Therefore, we need to seek specific ways and means of pushing the issue forward. The possibility of doing this is given by a document introduced at the Subcommittee's session in Geneva about the exploitation of aerospace objects at given altitudes.

As to the question of the nature of use of the geostationary orbit, its very formulation contains well-known contradictions. Everybody recognizes that on the one hand the geostationary orbit is an integral part of outer space and that on the other hand it offers limited resources. How do we resolve this dilemma? If all countries had equal scientific and technological possibilities we could simply divide the entire surface of the orbit among the countries wishing to receive their own part of it. However, that is not realistic. There is only one possible solution: more broadly to use the spacecraft in the orbit in the interests of the whole international community. Work that has been going on in the Legal Subcommittee on those lines for many years should be approved and continued.

Yesterday certain additional comments were made about the use of the geostationary orbit. They related specifically to the possibility of preparing a special legal regime. It is not out of the question that such an approach will become realistic in the future. New proposals allow us to look at the problem with some optimism.

Mr. ORRICO (Mexico) (interpretation from Spanish): As we deal with agenda item 8 the delegation of Mexico would like to make some comments on the three items making up the Legal Subcommittee's programme of work.

As regards consideration of the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interest of all States, taking into particular account the needs of developing countries, my delegation has already pointed out that our work should focus on devising a legal framework guaranteeing all States, especially developing countries, access to the knowledge gleaned from space science and technology and its uses, in such a way as to allow them to develop their own capacity in these areas. A first step in that direction would be to draw up a document including guidelines and recommendations on carrying out programmes for international cooperation on space matters. That was the purpose of the document that my delegation, together with others in the Group of 77, presented in 1991. The document proposes a series of principles for international cooperation in the exploration and utilization of outer space for peaceful purposes.

We are encouraged that the document has been accepted as the basis for our deliberations, and we trust that that will allow us to make progress in its substantive consideration. At the last session of the Legal Subcommittee some delegations contended that it was not right to make international cooperation mandatory. The delegation of Mexico completely agrees. That is why we emphasized that the aim of the document submitted by the Group of 77 is in no sense to make international cooperation mandatory; rather, it is only to establish guidelines, within a proper legal framework, for carrying out such international cooperation. We trust that we shall be able to continue our deliberations in the same constructive spirit as has prevailed in the past.

(Mr. Orrico, Mexico)

As for the question of the definition and delimitation of outer space and the character and utilization of the geostationary orbit, we support the argument made by a number of delegations that it is imperative that we reach a consensus on the matter. Indeed, as the delegation of Chile pointed out yesterday, a legal international framework already exists with regard to the utilization and exploitation of airspace. The right of each State to exercise sovereignty over its national or territorial airspace is universally recognized, and the only area in which there is disagreement concerns the limits of such national airspace, a matter that is indissolubly linked with the question of the definition and delimitation of outer space. In other words, the latter begins where the former ends or in a zone immediately adjacent to the ceiling set for national airspace.

Indeed, the solution to the problem of defining and delimiting outer space will not be found on a legal or technical basis; it must necessarily be based on scientific and technological arguments, which will form the foundation for the elaboration of the definition of outer space, if not the legal framework for its regulation.

In this connection we support the proposal by the Russian Federation - put forward in a working paper introducted at the last session of the Subcommittee in Geneva - that we consider the issues that bear on the legal régime applicable to aerospace objects, and the answer to the questions posed by that delegation at the last session of the Legal Subcommittee might be very useful as we seek to arrive at a legal definition and delimitation of outer space.

With regard to the question of the character and utilization of the geostationary orbit, we support the argument advanced by other delegations to

(Mr. Orrico, Mexico)

the effect that we must not sidestep the agreements drawn up by the International Telecommunication Union (ITU) with regard to this issue; those agreements are essential elements to any discussion and to any agreements in the Committee on the Peaceful Uses of Outer Space. At the same time the delegation of Mexico appreciates the innovative approach to dealing with this issue that has been suggested by the delegation of Colombia. We feel that we have sufficient material to begin substantive discussion of this important question.

On the question of the use of nuclear power sources in outer space, my delegation agrees with the widely held opinion that it is extremely important for the Committee to complete work on the draft set of principles at its current session. However, we also feel that the contents of Principle 4, which deals with safety assessment - should be revised to eliminate certain imprecisions and to fill in certain gaps. The imprecisions to which I refer involve the fact that there is no fixed time limit for submission of safety assessments, which, in turn, might make it difficult or even impossible for the concerned States to make a careful analysis of such assessments. In addition, there are no guidelines for resolving areas of nonconformity or conflict that might arise with regard to the assessments provided by the launching State, particularly since Principle 10, on the settlement of disputes, is very general and vague on the subject.

We also consider that the results of such safety assessments must be made public through the United Nations Secretary-General and that we should not confine ourselves merely to informing him on how States may obtain the results of a given assessment. In addition, the delegation of Mexico has noted with concern that, following the last session of the Scientific and Technical

(Mr. Orrico, Mexico)

Subcommittee, the idea has begun to circulate that we should limit the scope of the draft principles to electric power on board space objects, as stipulated in the fifth paragraph of the Preamble proposed by a group of delegations. We regret that some of the informal consultations held during the session of the Legal Subcommittee at Geneva involved a relatively small number of delegations and that the delegation of Mexico did not have an opportunity to participate in them. We are therefore not familiar with the arguments underlying the proposal to limit the scope of the application of the draft principles we are negotiating. We should like to know, in particular, precisely what forms of utilization of nuclear energy sources would fall outside the scope of the draft principles. My delegation would be grateful for an explanation from the sponsors of the draft Preamble so that we might properly consider their proposal.

The CHAIRMAN (interpretation from Spanish): At this point I should like to say, having taken very much to heart the remarks made by the representative of Mexico, that this afternoon, as I have announced, during our informal consultations on nuclear power sources, there will be an extensive opportunity to discuss these issues.

Mr. TELLES RIBEIRO (Brazil): Although the Legal Subcommittee was not able to finalize the draft principles on nuclear power sources in outer space at its thirty-first session, my delegation considers that the deliberations in Geneva were quite productive and that some important advances were achieved on the three substantive items on its agenda. As many speakers have noted, active discussions were conducted in a constructive atmosphere, reflecting sincere efforts by delegations to reach common ground for further progress.

(Mr. Telles Ribeiro, Brazil)

With regard to the agenda item on the definition and delimitation of outer space and on the character and utilization of the geostationary orbit, my delegation wishes to express its appreciation for the contributions made by the delegations of the Russian Federation and Colombia, which have provided documents that served as a useful basis for our deliberations.

The questions concerning the legal régime for aerospace objects contained in working paper A/AC.105/C.2/L.189, submitted by the delegation of the Russian Federation, raised many interesting elements for the Subcommittee's consideration that deserve to be discussed in greater depth at future sessions. In this regard my delegation is of the view that the Subcommittee should, inter alia, try to compile the current practices of States during the relevant phases of launching or landing of aerospace objects with a view to identifying those areas where clarifications from a legal perspective might be useful.

(Mr. Telles Ribeiro, Brazil)

My delegation wishes to thank the representative of Colombia, Mr. Alfredo Rey, for the very comprehensive and constructive exposition presented yesterday concerning the question of the geostationary orbit. We welcome the open spirit in which his delegation and a number of other delegations are approaching the subject and we stand ready to cooperate in the search for a solid basis to make practical progress on this question.

My delegation would also like to support the pertinent observations made yesterday by the representative of Chile, Mr. Raimundo Gonzalez, concerning the need for clear criteria for the delimitation of outer space, lest ambiguities and uncertainties arise between segments subject to the sovereignty of States and areas which constitute the common heritage of mankind.

My delegation is pleased by the positive and constructive discussions we had in the Working Group on the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries. As you yourself mentioned in your opening statement, Mr. Chairman, discussions on this item were "preliminary but detailed", focusing specifically on working paper A/AC.105/C.2/L.182 submitted by Argentina, Brazil, Chile, Mexico, Nigeria, Pakistan, the Philippines, Uruguay and Venezuela at the thirtieth session of the Legal Subcommittee. Under the skilful chairmanship of Mr. Raimundo Gonzalez, delegations engaged in an active exchange of views on the contents of this working paper, presenting relevant comments and clarifications. My delegation is especially grateful to those delegations that offered valuable suggestions for further improving some of the ideas

(Mr. Telles Ribeiro, Brazil)

contained in the working paper and, together with other sponsors, intends to take those views in due account at a future revision of the working paper.

In particular, my delegation shares the views expressed by the representative of Argentina yesterday to the effect that the contents of the working paper in no way detracts from the relevance of existing cooperation in space activities at bilateral, regional and multilateral levels, nor tries to impose a compulsory character on international cooperation in this field. Its main purpose is the promotion of a joint exercise in the search for mutually beneficial forms of cooperation among States with different levels of space capabilities.

My delegation also wishes to recall that at the session in Geneva the Chairman of the Working Group, who presented working paper A/AC.105/C.2/L.187, had tried to highlight similarities and discrepancies in the approaches of various States to the subject under review and had drawn particular attention to paragraph 10 of the paper, in which he had noted

> "that all respondents agree that the main, and perhaps the most practical and promising, way of realizing the principle contained in the first sentence of article I of the Outer Space Treaty is by further developing international cooperation in the exploration and peaceful uses of outer space." (A/AC.105/C.2/L.187, para. 10)

In effect, the detailed and useful discussions held by the Working Group on working paper A/AC.105/C.2/L.182 served precisely to identify ways and means for further developing such cooperation, and therefore flowed logically from the Chairman's own working paper.

While delegations are entirely free to address or present any working paper they deem appropriate, it should be noted that the report of the Working Group reflects faithfully the differing degrees of attention devoted to the

(Mr. Telles Ribeiro, Brazil)

various working papers before the Group. Therefore, the Chairman's working paper, while constituting an important contribution to the work of the Subcommittee on this subject, could not be considered "the focus of our work next year", as suggested by one delegation, but rather "one" of the documents that delegations may wish to discuss within the overall framework of the consideration of the question of space benefits, together with other relevant documents.

Turning to the item "The elaboration of draft principles relevant to the use of nuclear power sources in outer space, with the aim of finalizing the draft set of principles at the current session", my delegation notes that intensive informal consultations were conducted in Geneva with the aim of solving the few remaining obstacles to the completion of the whole set of principles.

After patient and untiring efforts, the Chairman of the Working Group, Mr. Franz Cede, and later Mr. Helmut Freudenschuss on his behalf, prepared two "working non-papers" that could provide a good basis for reaching a consensus on the outstanding principles.

Having participated in these informal consultations, my delegation feels that those documents are the maximum common denominator possible. The language contained in the texts may not be to the complete satisfaction of all delegations. In fact, it may not be to the complete satisfaction of any delegation. This equal distribution of discontent may be proof that we have all reached our bottom lines.

For my delegation, ensuring the safety and protection of populations from nuclear hazards comes first and foremost in our considerations. With a vast land mass and densely populated areas, Brazil may be exposed to future accidents involving nuclear power sources (NPS). Therefore, it is essential

(Mr. Telles Ribeiro, Brazil)

that the draft set of principles provide fully adequate guidelines and criteria for the safe use of NPS, that it determine the most competent party to conduct the safety assessment, and that adequate prior notification be given to countries most vulnerable to potential accidents.

In this respect, my delegation cannot accept formulations that would attribute to parties not sufficiently qualified, either scientifically or technically, the responsibility for conducting a safety assessment of NPS with which they are not familiar. Such a course would entail either a deficient assessment, endangering the safety of third parties; or the need for full access of those parties to the manufacturer's facilities and production processes; or the emergence of "launching States of convenience" having only nominal jurisdiction and control. In any of the aforementioned cases, further and detailed consideration of their implications would become necessary.

As most delegations have previously stated, negotiations on this draft set of principles have reached a point that cannot usefully go further. We must decide whether we can cut at this session the Gordian knot that has been tying up the adoption of the draft principles of NPS or we must go on weaving the endless garment of Penelope.

Ms. LOSTY (United Kingdom): Mr. Chairman, as this is the first intervention by the United Kingdom delegation at the thirty-fifth session of the Committee on the Peaceful Uses of Outer Space, I should like to take this opportunity to add my delegation's satisfaction at seeing you once again presiding over the Committee's deliberations. We share the sentiments of other members in expressing our confidence in the progress that the Committee will achieve under your chairmanship.

(Ms. Lonty, United Kingdom)

Let me first of all restate for the record that the United Kingdom remains unconvinced of the need for a definition and delimitation of the boundary between airspace and outer space. However, there is no doubt that document A/AC.105/C.2/L.189, submitted in this context by the Russian Federation, raises a number of interesting questions.

(Ms. Losty, United Kingdom)

The following is a reiteration of my delegation's preliminary views on the topic. In considering the necessity for a legal regime for aerospace vehicles, let us look first of all at the three types of aerospace craft under development.

First, the ballistic type, which takes off vertically, is powered by rockets and glides back with limited aerial manoeuvrability, to land on an extended runway. Current examples of this are the United States space shuttle and the Buran of the former Soviet Union. Future contenders include Japan's Hope vehicle.

The second type of aerospace craft is the horizontal take-off and landing, or HOTAL, type. One variant of this, for example, the German Sanger concept and the Russo-British-Ukrainian Antonov interim HOTAL concept, would incorporate a flyback booster stage. This ferries the space plane up to high altitude, whereupon the space plane disengages and uses rocket power to achieve orbit. The other variant of this HOTAL type in the longer term is the single-stage-to-orbit vehicle. This vehicle would take off and land from a standard runway, using a combination of air-breathing engines and rockets. It would return to Earth in a fully manoeuvrable way to land on a conventional runway, increasing safety by permitting controlled evasive action. The United States National Aerospace Plane and the British HOTAL and Skylon variant are aiming in this direction.

The third generic type of aerospace craft in the much longer term is the advanced supersonic transport. This would behave as an aircraft for most of its flight, except for performing a fractional orbit to speed its ground coverage and cut commercial flight times between terrestrial points.

(Ms. Losty, United Kingdom)

My delegation does not believe that a special legal regime for aerospace vehicles is necessary for the foreseeable future. From a functional perspective, both the ballistic type and the HOTAL type of aerospace craft use the interstitial zone between currently navigable airspace and recognised outer space as a zone of transition and not of operation. The ballistic type is a dedicated space object which only incidentally uses airspace. The HOTAL type, although potentially capable of using airspace more fully, would do so only to increase efficiency and reduce cost to and from Earth orbit. Therefore, for the foreseeable future my delegation sees only a necessity for practical coordination with relevant air-traffic-control systems within existing flight information regions to ensure collision avoidance.

As for the third type, the advanced supersonic transport, it is too early to say whether it will operate in the interstitial zone or not. But it seems likely that, given its Earth-orientated mission with only peripheral outer-space involvement, it will be treated as an aircraft for the purposes of the 1944 Chicago Convention and its technical annexes. The latter can be amended to take into account any special circumstances engendered by such missions.

My delegation doubts that any State will wish to undermine the certainty of space law, which provides in article II of the 1972 liability Convention for absolute liability of the launching State in the event that a space object causes damage in the airspace or on the ground. This space-law certainty, coupled with pragmatic coordination with highly regulated airspace, militates against the necessity for a sui generis regime in the foreseeable future.

(Ms. Losty, United Kingdom)

Turning briefly to the geostationary orbit (GSO), again the views of my delegation are well known and remain unchanged. We consider that the International Telecommunication Union (ITU) is well able to handle extant problems inherent in managing the orbit spectrum resource efficiently, economically and so as to enable countries or groups of countries to have equitable access to it in accordance with article 33 of its Nairobi Convention. However, one problem in this context which might well require our Committee's involvement is that of debris in the GSO. The matter is complicated by the fact that the GSO is not purged of debris over time, as is the case with lower-Earth orbits. It may be that our Committee will need to consider in time the viability of consolidating in a normative way certain practices, such as the boosting of geostationary spacecraft into "graveyard" orbits. However, this may be better dealt with when space debris becomes a fully fledged item on our agenda, as it surely should once the Scientific and Technical Subcommittee has clarified the issues involved for us. My delegation looks forward to working actively in pursuit of satisfactory solutions to the debris problem to ensure that outer space may continue to be free for exploration and use by all States on a basis of equality, in accordance with article I of the outer space Treaty.

On the question of the outstanding principles on nuclear power sources in space, the United Kingdom remains committed to a consensus solution and supports the changes proposed for Principle 12, which allow for a review of the principles after a reduced period of time.

Finally, on the question of space benefits, my delegation will make separate statements under agenda item 10 of the Committee - spin-off benefits in space technology.

Mr. POCAR (Italy): Since this is the first time that my delegation has spoken at this session of the Committee, I wish to express our deep satisfaction at seeing you again, Mr. Chairman, presiding over our deliberations. The Committee could not be in better hands. Your wise and constructive guidance will certainly be of enormous help to all of us, both in finalizing, as we hope, part of the work of the Committee and in making progress on the other items before us for consideration.

(Mr. Pocar, Italy)

Commenting on agenda item 8, the Italian delegation endorses with satisfaction the report of the Legal Subcommittee on its thirty-first session and the steps forward it has made in various respects. As to the main topic on the Legal Subcommittee's agenda - the utilization of nuclear power sources in outer space - these steps forward, made on the basis of the work carried out by the Scientific and Technical Subcommittee, should indeed allow our Committee to finalize the set of principles under elaboration, in compliance with the resolution adopted by the General Assembly last year.

When the adoption of such an important body of principles as the one under consideration is at hand, it is only natural that perplexities and the temptation to further improve a text that will guide future activities should arise. However, at the present stage of our deliberations, and in the light of the long and constructive debates over the years in both Subcommittees, my delegation is of the view that the well-balanced proposals made so far justify a conclusion of our work and that a final effort should be made to this end. We are ready to make our full contribution in an open spirit of cooperation in order to reach a satisfactory solution to this urgent matter.

Let me now turn briefly to the other items discussed within the Legal Subcommittee. With regard to agenda item 4, we have taken note of the current status of the debate and followed with attention and interest the statements and proposals made by other delegations in the Subcommittee and in the Committee. We would like to say that we are not, as a matter of principle, against exploring new or alternative approaches to the issues that are on the agendas of the Committee and of its Subcommittees. However, as our delegation has stated on previous occasions, we still do not think that the subject of the delimitation of outer space has at present any standing in current international space law.

(Mr. Pocar, Italy)

As to the geostationary orbit, the problems the Subcommittee might consider are already being dealt with by the International Telecommunication Union (ITU), and we share the point of view expressed by other delegations that moves that could undermine the efficient and well-balanced regulation made by the ITU should be avoided.

Our delegation has followed with interest the developments in the consideration of item 5 on the Legal Subcommittee's agenda concerning the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries. In particular, we wish to note that the report of the Chairman of the Working Group on the information submitted by States on their national legislation and their practices related to space research and activities is extremely helpful and shows that fruitful cooperation is already going on between many States, including developing countries. Such spontaneous cooperation, based on different approaches - especially at the bilateral level - should be further encouraged and the forms in which it takes place disseminated with a view to developing a general framework in the interests of all States.

In conclusion, let me express my delegation's satisfaction at the additional measures agreed upon by the Subcommittee to improve the utilization of conference servicing resources. Such measures, together with the rotation adopted in the discussion of the items on the agenda, will certainly contribute to a further rationalization of our work.

The CHAIRMAN: We have thus concluded our consideration of agenda item 8.

SPIN-OFF BENEFITS OF SPACE TECHNOLOGY: REVIEW OF CURRENT STATUS

Mr. CHANDRASEKHAR (India): Our delegation wishes to make a few remarks on the agenda item on the spin-off benefits of space technology. In past sessions of the Committee, our delegation made presentations on the efforts and status of the promotion of spin-off benefits of space activities undertaken by the Indian Space Programme. Also, we dealt with various aspects related to the needs and specific measures for promoting international cooperation in this area.

The very aim of the Indian Space Programme is the development and application of space technology for peaceful uses and for assisting the rapid development of the nation through its many beneficial applications. Hence, from the very beginning, the Indian Space Programme laid emphasis on the development and promotion of such a wider spread of applications and on tuning the programme towards meeting these needs on a self-reliant basis.

Accordingly, conscious efforts have been focused on involving potential users in the definition of needs and in the conduct of application experiments on a wider scale and in the development of human resources in the user organizations for effective applications of space technology. At the same time, stress was also placed on the maximum use of national industries for the space projects so that they might not only support the various development and manufacturing needs of space projects but also spur the growth of applications by servicing user needs for space applications.

Also, they are actively encouraged and assisted in realizing spin-off products and applications. This is attempted through a technology-transfer programme from the space laboratories to competent industries on a promotional basis and carried out through a host of measures, such as the wider

(Mr. Chandrasekhar, India)

dissemination of information, assistance during production in industry, seminars and training programmes, and promotional pricing, among other things.

Technologies for over 180 products and processes have been transferred to Indian industries, and a predominant proportion of these are used for servicing space-applications growth, such as, for example, various types of satellite communication terminals, including television reception systems, weather and meteorological data communication systems, equipment for rural telegraphic services, disaster-warning systems, and remote-sensing applications equipment for users, besides several spin-off products, such as adhesives, chemicals, laboratory instruments and computer-oriented systems.

For promoting the wider spread of spin-off benefits of space technology, there is a need to energize further action and stronger international cooperation. One of the fundamental requirements for generating spin-offs in various countries is their participation in space activities that offer opportunities for making innovations and technological developments or adaptations.

(Mr. Chandrasekhar, India)

In this regard, assistance and encouragement for indigenous development of certain systems or equipment in various developing countries should be given; in particular, several ground systems for space applications could be developed or manufactured in the developing countries, possibly at lower cost. Further, advanced countries could consider promoting exports of such systems from developing countries, to satisfy their own needs and thereby help sustain industries in developing countries. Information exchange on beneficial spin-off technologies from space should be further strengthened so that these can facilitate indigenous efforts in various countries to meet their own needs and those of others.

It is necessary to ensure that the increased commercialization of space services does not pose a serious threat to the free exchange of information or to the encouragement of the development of products in connection with space applications and spin-offs. On the other hand, there is a need to consider ways in which commercial activities in advanced nations can be harmonized with the interests of developing countries and incentives for development there. In this regard, we suggest that the United Nations Programme on Space Applications should devote at least one of its training seminars or expert meetings each year to the subject of promoting spin-off benefits from space.

The Committee has already endorsed a recommendation that space agencies that are actively involved in a wide spectrum of space activities and applications should consider allocating at least a small portion of their budgets to promoting spin-off benefits in various countries. The Committee should reiterate this appeal, and actively encourage such measures. Unless concerted efforts are made internationally for greater assistance and promotional measures, the wider spread of spin-offs from space will not occur.

Mr. CHEN Zhongqing (China) (interpretation from Chinese): I would like to thank you, Sir, for giving me the opportunity to introduce briefly to the members the working paper submitted by the Chinese delegation to the current session entitled "Spin-off benefits of space technology", contained in document A/AC.105/L.194.

Our preliminary experiences in the use of space technology in civilian production have shown obvious spin-off benefits. It is true that our research work started in the 1970s, but it was only after China adopted the policies of reform and of opening to the outside world about a decade ago that major development in this field began.

Our space industry is a multidisciplinary, high-technology industry that has in its possession the most advanced knowledge of science and technology, a great number of first-rate scientists and technicians and the most modern equipment. Therefore, after fulfilling the national space plan, it still has the spare capacity to carry out other civilian production and bring further economic benefits to society.

In the past 10 years or so, the Chinese space industry has been very successful in its conversion to civilian production, manufacturing thousands of non-space products, such as cars, household appliances, lathes and cutting and measuring tools. The value of the civilian products created by the Ministry of Aerospace Industry has been increasing at an annual rate of 30 per cent in recent years, and its share in the total industrial production of the Ministry has also grown, from 10 per cent in 1980 to 67 per cent in 1990.

Thus, our space industry has not only contributed to our national economy and construction by providing our people with the numerous products they need, it has also, through its superior technology and equipment, given impetus to

(Mr. Chen Zhongqing, China)

the economic and social development of many regions of China. Moreover, it has also succeeded in using the market mechanism of the technology market to promote technological spin-offs so as to facilitate the progress of technology and cost-effectiveness in related fields.

Here, I should like to cite an interesting example to illustrate the potential reach of space technology spin-offs. On 15 December 1989, the world's biggest outdoor bronze statue of Buddha was inaugurated on top of Da Yu Mountain in Hong Kong after nearly three years of work by the Chinese space industry. It measures 26.4 metres in height, including the foundation, and weighs 250 tons. The design called for an exquisite piece of art that boasts not only classic elegance but also a modern design which will enable it to withstand the constant battering of the elements, including typhoons, the scorching sun, rainstorms and salty mist, and the attacks of fungi. Our space industry, using thin-wall-structure technology, aerodynamic tests, computer-assisted design, new mildew- and corrosion-resistant material, large-area bronze welding techniques and other high-technology processes has integrated modern space technology with traditional bronze craftsmanship and effected a perfect marriage of Buddhist art and modern civilization.

In the process of transferring space technology to civilian industry, it is extremely important to strengthen international cooperation. Over the past 10 years, the Chinese space industry has initiated nearly 100 joint ventures with foreign enterprises; it has imported much advanced equipment and many assembly lines to improve further the standard and quality of existing civilian products and to create favourable conditions for them to be exported.

In October 1991, a seminar on international cooperation for the conversion of military industry to civilian production was held in Beijing.

(Mr. Chen Zhongqing, China)

The seminar was organized jointly by the Chinese Association on the Peaceful Uses of Military Industrial Technology and the United Nations Centre on Science and Technology for Development. It was attended by almost 100 experts and officials from more than 10 countries. At the seminar, there were extensive exchanges of views on a great many subjects, including the transfer of space technology to civilian industry.

The use of space technology in civilian production has produced an enormous spin-off benefit, and it has a bright future. The Chinese space industry is striving to bring more high-technology products to the civilian market so as to improve the cost-effectiveness of our national economy. We are ready to strengthen economic and technological exchanges and cooperation with other countries so that, together, we can further increase the benefits of space techology for all mankind and contribute to the peaceful uses of outer space.

The meeting rose at 12 noon.